The Commonwealth of Massachusetts
Executive Office of Health and Human Services
Department of Public Health
William A. Hinton State Laboratory Institute
305 South Street, Jamaica Plain, MA 02130

DEVAL L. PATRICK
GOVERNOR

TIMOTHY P. MURRAY
LIEUTENANT GOVERNOR

JUDYANN BIGBY, MD
SECRETARY

JOHN AUERBACH
COMMISSIONER

Luke Goldworm, ADA

Suffolk County District Attorney's Office
By e-mail

February 20, 2012

Re: Comm. v. ███████████ State Lab no. ██████████

ADA Goldworm,

Please find below a discovery package for the case noted above. The material is collated in the following manner:

1) the chemists' cvs
2) the Evidence Office receipt to the Boston Police
3) the inventory control card
4) the Drug Powder Analysis Form
5) the gas chromatography screen
6) the gas chromatography/mass spectrometry (gc/ms) data

If you need further clarification of this material, call me directly at (617) 983-6627.

Sincerely,

Michael Lawler
Senior Chemist

Cc: Kate Corbett

Curriculum Vitae

Michael Lawler

Education:

University of Virginia, Charlottesville, Va. Bachelor of Arts in English, 1975

Harvard University, Cambridge, Ma. Master of Arts in biology, 1995

Experience:

1990-present currently Chemist III, Mass. Dept. of Public Health, Drug Lab analyst determining the identity of unknown substances and providing expert testimony in the Courts. Conduct special testing for poisons within drug exhibits (e.g. strychnine in MDMA)

2005-2008 lecturer in chemistry, Curry College, Milton, Ma.

1988-1990 New England Newborn Screening (NENS) Biochemist conducting pilot studies and validation trials of new newborn screening tests. Investigator and co-author of papers noted below. Introduced screening test for Biotinidase Deficiency. Liaison with interstate collaborators in national studies.

1983-1988 Supervised NENS urine screening lab for metabolic disorders. Conducted research in collaboration with Children's Hospital (Boston) detecting neuroblastoma, a cancer of early childhood. Conducted reference testing for rare metabolic disorders for an international audience.

1982-1983 NENS hypothyroid assay technologist with Tuft's University

1979-1981 Mass. Bay Community College, staff technologist preparing materials for the laboratory technician program, which included reagents, apparatus and maintaining stock cultures of human pathogens.

Additional education and special training

Drug Analysis, completed six week training course by senior staff within the Department of Public Health Drug Analysis Laboratory

National Laboratory Network Training Program course as Expert Witness

Qualified as an expert witness in the Massachusetts Courts and the U.S. District Court

Current Drug Trends – Multijurisdictional Drug Task Force Academy August 2009

CDC course in public health response to bioterrorism

U.S. Army course in biologic warfare and terrorism

DEA Special Testing Lab Seminar June 2011

Sigma-Aldrich LC/MS – New Applications Fall 2011

Journal Publications

Screening, 1992, 1:34-37; Lawler,M., Frederick,S., Rodriguez-Anza, S.,Wolf,B., Levy,H., *Newborn Screening for Biotinidase Deficiency, Pilot Study and Follow-up of Identified Cases*

Genetic Screening, 1990, 11-18, Mitchell,M., Lawler,M., Walraven,C., Hermos,R., *To Screen or Not to Screen for Congenital Hyperplasia: Is that the Question?*

The Journal of Pediatrics, 116: 78-83, Secor-McVoy,J., Lawler,M., Schmidt, M., Ebers,D., Hart,P., Pettit,D., Blitzer,M.,Wolf,B., *Partial Biotinidase Deficiency: Clinical and Biochemical Features*

Professional Affiliations

Northeastern Association of Forensic Scientists (NEAFS) since 2005

Awards

Theobald Smith Education Grant for graduate studies

Curriculum Vitae

Kate A. Corbett

Education

Bachelor of Science Degree, CHEMISTRY May 2003
MERRIMACK COLLEGE
Coursework included: Organic Chemistry, Inorganic Chemistry, Quantitative
Analysis, Instrumental Analysis, Physical Chemistry, Physics, Calculus

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Employment

Chemist II State Laboratory Institute (March 2008-Present)
Massachusetts Department of Public Health
Drug Analysis Laboratory
➢ Responsible for the identification of substance and trafficking substances to
   determine violation of the Massachusetts drug laws
➢ Responsible for the identification of pharmaceuticals to determine violation of
   the Massachusetts drug laws
➢ Operate analytical instrumentation, microscopes and balances for forensic
   drug analysis

Chemist I State Laboratory Institute (2005-March 2008)
Massachusetts Department of Public Health
Drug Analysis Laboratory
➢ Responsible for the identification of substance to determine violation of the
   Massachusetts drug laws
➢ Operate analytical instrumentation for the purpose of performing forensic
   drug analysis
➢ Successfully completed an eight week training course in the analysis of drugs
   conducted by senior staff of the Department of Public Health, Drug Analysis
   Laboratory
➢ Appointed an assistant analyst for the Department of Public Health, Drug
   Analysis Laboratory in 2005

Research Associate (September 2003 – August 2005)
SENSOR TECHNOLOGIES, INC - Shrewsbury, MA
➢ Prepared chemistries used in making sensor beads
➢ Generated and examined sensors employing fluorescence spectroscopy
➢ Performed protein, dye and sugar assays using UV/VIS spectrophotometry
➢ Carried out titrations on ricin using fluorescence correlation spectroscopy
➢ Statistical analysis of experimental data

Intern (March 2003 – August 2003)
MASSACHUSETTS STATE POLICE CRIME LABORATORY - Sudbury, MA
➢ Assisted in the gathering of case files to fulfill the National Institute of
   Justice's No Suspect Backlog Reduction Grant
➢ Observed in the Evidence, Criminalistics, DNA, Drug, Trace, Toxicology, and
   Bomb/Arson Units

BostonPolice
DEPARTMENT

DRUG RECEIPT

CC # █████████████████

BOOK # ~~~~~~~~~~~~ 39

PAGE # 173

DESTRUCTION # _____

District/Unit _____ C-6 _____

Name & Rank of Arresting Officer _____ Robert C. Young _____ ID# _____ 10749 _____

DEFENDANT'S NAME	ADDRESS	CITY	STATE
████████████	████████████████████████████		

DESCRIPTION OF ITEMS SUBMITTED	GROSS QUANTITY	LAB USE ONLY GROSS WEIGHT	ANALYSIS NUMBER
Spoon with cooked Heroin	56.89 gr	██████████	

To be completed by ECU personnel only

Name and Rank of Submitting Officer _____ Diane Loy _____ ID# _____ 9370 _____

Received by _____ Date _____ 5-28-10 _____

ECU Control # _____

No. ██████████   Date Analyzed: 10/12/10

City: Boston D.C.U. Police Dept.

Officer: P.O. Diana Lopez

Def: ██████████

Amount: Subst RES

No. Cont: 1   Cont: spoon

Date Rec'd: 05/28/2010   No. Analyzed:

Gross Wt.:   56.99 ✓   Net Weight:

                                    # Tests: Residue
                                             5ml
Prelim: heron   Findings: Heroin ZKA C

DRUG POWDER ANALYSIS FORM

11/12/10

SAMPLE ███████████ ENCY _Boston D CM_   ANALYST _MrC_

No. of samples tested: _____   Evidence Wt. _56.99_

PHYSICAL DESCRIPTION:

Spoon with residue

Gross Wt (   ): _____

Gross Wt (   ): _____

Pkg. Wt: _____

Net Wt: _____

OHAUS 2334 9-3-10

$2_g = 20.0000g$

$1_g = 10.0000g$

$5 = 5.0000g$

$1 = 0.9999g$

PRELIMINARY TESTS
Spot Tests

Cobalt Thiocyanate (   ) ⊖

Marquis _____ (+)

Froehde's _____ (+)

Mecke's _____ (+)

Microcrystalline Tests

Gold Chloride _____

TLTA (   ) _____

OTHER TESTS

gc + (+) heroin

PRELIMINARY TEST RESULTS

RESULTS _____

DATE _____

GC/MS CONFIRMATORY TEST

RESULTS _Heroin_

MS OPERATOR _KAC_

DATE _10/12/10_

Sequence: C:\CHEM32\1\SEQUENCE\DEFAULT.S

Sequence Table (Front Injector):

Method and Injection Info Part:
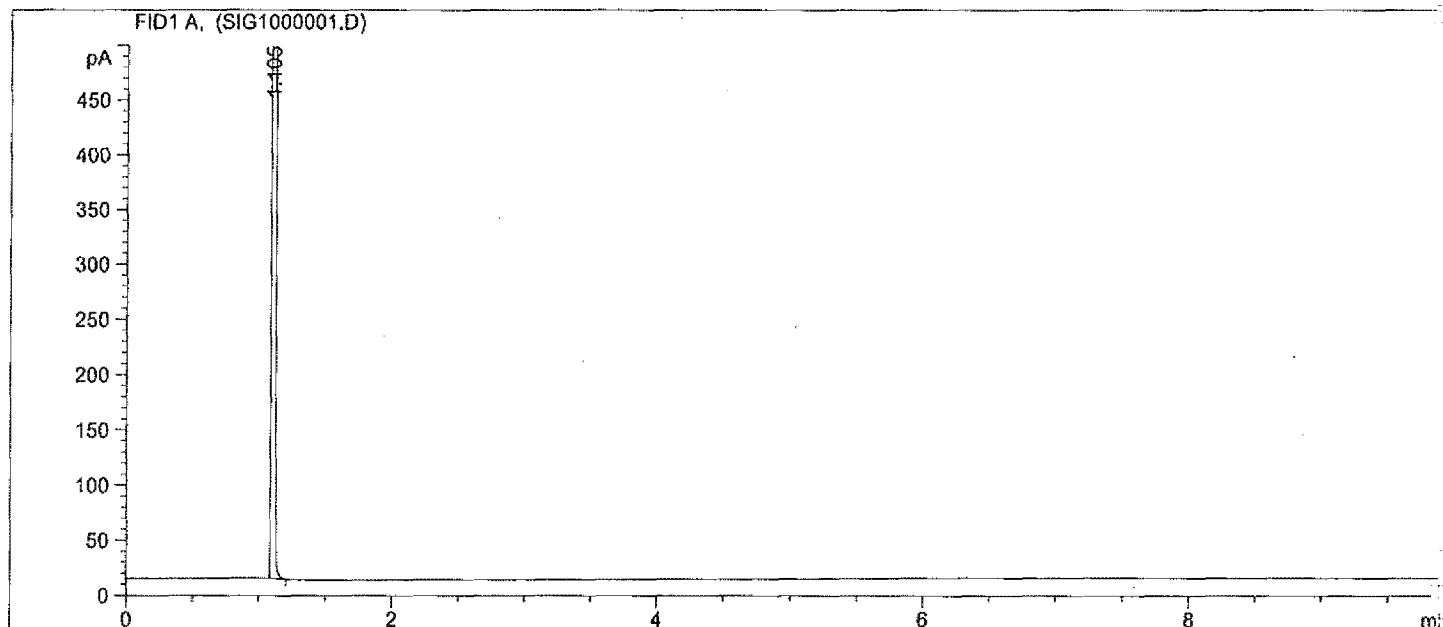
Line	Location	SampleName DataFile LimsID	Method	Inj	SampleType	InjVolume
1	Vial 1	BLANK	ROUTINE	1	Sample	
2	Vial 2	HEROIN STD	ROUTINE	1	Sample	
3	Vial 3	BLANK	ROUTINE	1	Sample	
4	Vial 4	███████	ROUTINE	1	Sample	
5	Vial 5	BLANK	ROUTINE	1	Sample	

Sequence Table (Back Injector):

No entries - empty table!

Drug Lab GC#4 10/6/2010 1:23:35 PM ASD

Data File C:\CHEM32\1\DATA\SIG1000001.D
Sample Name: BLANK
===
  Acq. Operator   : ASD   Seq. Line :   1
  Acq. Instrument : Drug Lab GC#4   Location : Vial 1
  Injection Date : 10/6/2010 1:25:45 PM   Inj :   1
                                              Inj Volume : 1 µl
  Sequence File   : C:\CHEM32\1\SEQUENCE\DEFAULT.S
  Method   : C:\CHEM32\1\METHODS\ROUTINE.M
  Last changed   : 7/28/2010 1:59:56 PM
===

===
                        Area Percent Report
===

Sorted By   :   Retention Time
Multiplier: :   1.0000
Dilution: :   1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,
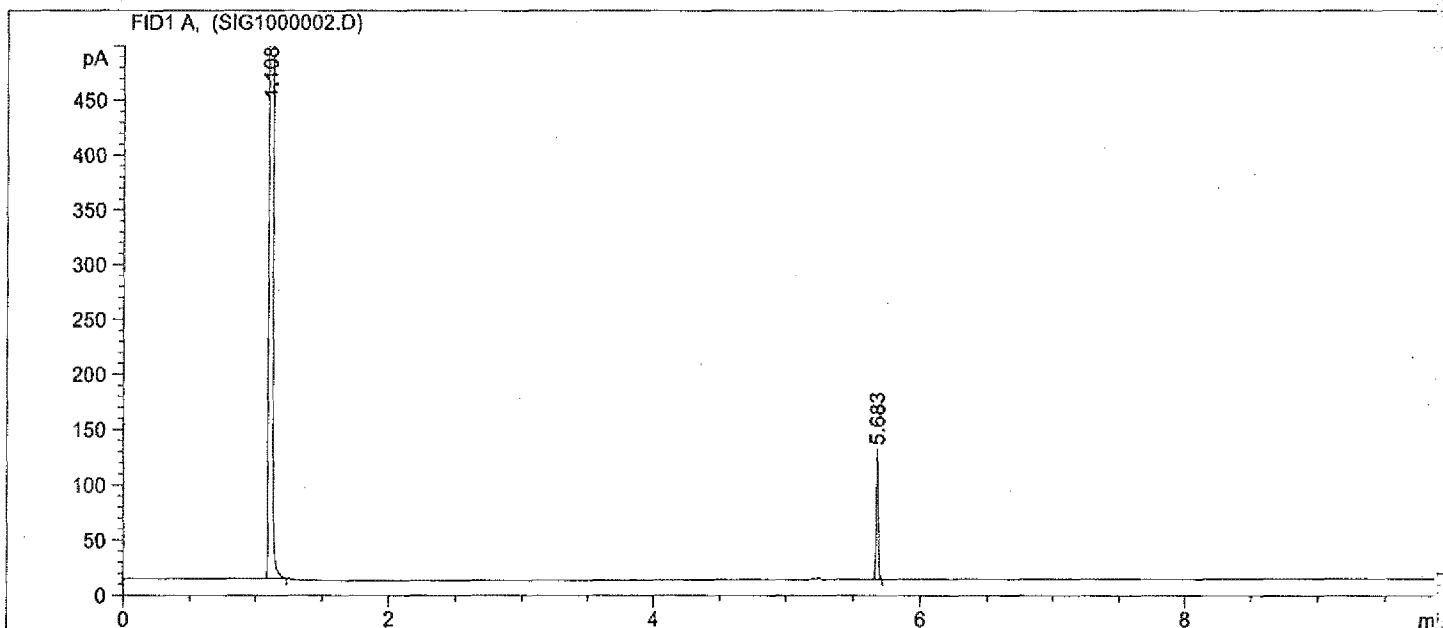
Peak RetTime Sig Type   Area   Height   Area
  #   [min]   [pA*s]   [pA]   %
----|-------|---|----|----------|----------|--------|
  1   1.105 1 BB S 6.55781e4 6.96061e4 1.000e2

Totals :   6.55781e4 6.96061e4

===
                      *** End of Report ***

rug Lab GC#4 10/6/2010 1:35:46 PM ASD   Page   1 of 1

Data File C:\CHEM32\1\DATA\SIG1000002.D
Sample Name: HEROIN STD

```
========================================================================
 Acq. Operator    : ASD                        Seq. Line :    2
 Acq. Instrument  : Drug Lab GC#4               Location : Vial 2
 Injection Date   : 10/6/2010 1:38:39 PM             Inj :    1
                                               Inj Volume : 1 µl
 Sequence File    : C:\CHEM32\1\SEQUENCE\DEFAULT.S
 Method           : C:\CHEM32\1\METHODS\ROUTINE.M
 Last changed     : 7/28/2010 1:59:56 PM
========================================================================
```
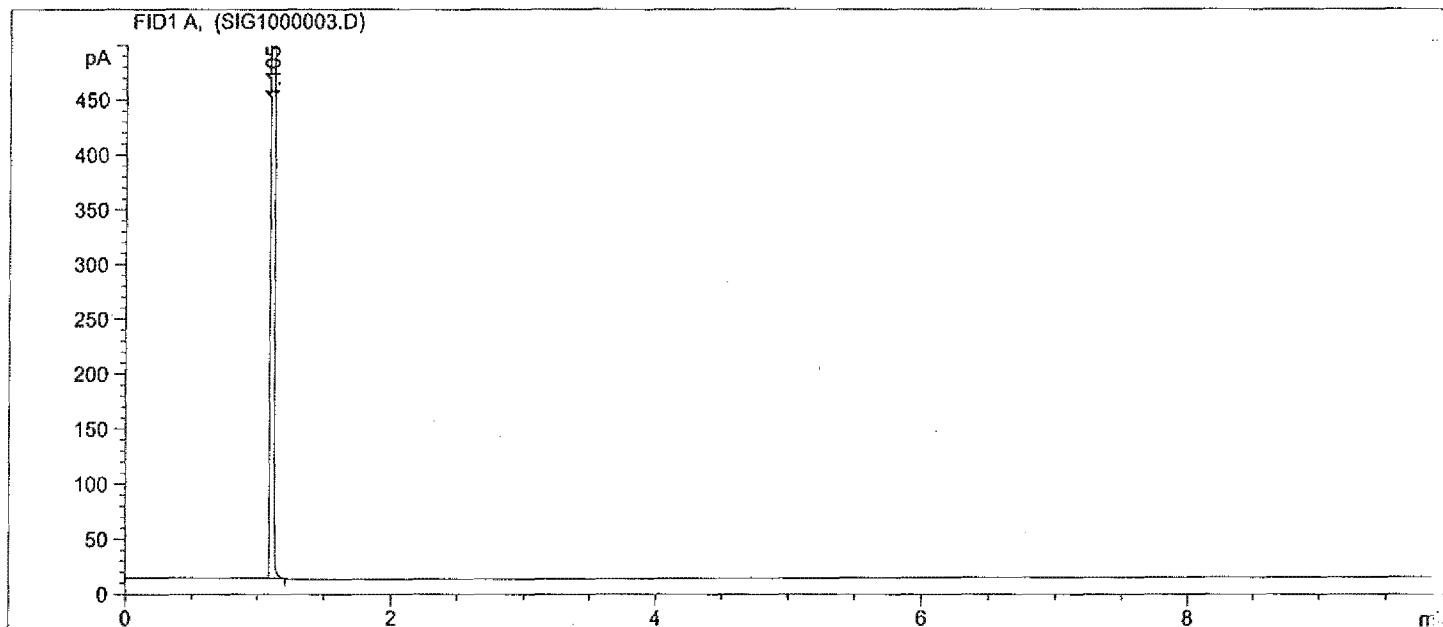


```
========================================================================
                       Area Percent Report
========================================================================

 Sorted By           :        Retention Time
 Multiplier:                  :      1.0000
 Dilution:                    :      1.0000
 Do not use Multiplier & Dilution Factor with ISTDs

 Signal 1: FID1 A,

 Peak RetTime Sig Type    Area       Height      Area
  #   [min]            [pA*s]       [pA]          %
 ----|-------|---|----|----------|----------|--------|
   1   1.108  1  BB S 1.05671e5  1.13547e5  99.87665
   2   5.683  1  BB     130.50673  116.18065   0.12335

 Totals :              1.05801e5  1.13663e5
```

```
========================================================================
                      *** End of Report ***
```

==

```
Acq. Operator   : ASD                        Seq. Line :    3
Acq. Instrument : Drug Lab GC#4               Location : Vial 3
Injection Date  : 10/6/2010 1:51:39 PM             Inj :    1
                                          Inj Volume : 1 µl
Sequence File   : C:\CHEM32\1\SEQUENCE\DEFAULT.S
Method          : C:\CHEM32\1\METHODS\ROUTINE.M
Last changed    : 7/28/2010 1:59:56 PM
```
==

==

Area Percent Report
==

```
Sorted By              :        Retention Time
Multiplier:            :          1.0000
Dilution:              :          1.0000
Do not use Multiplier & Dilution Factor with ISTDs
```
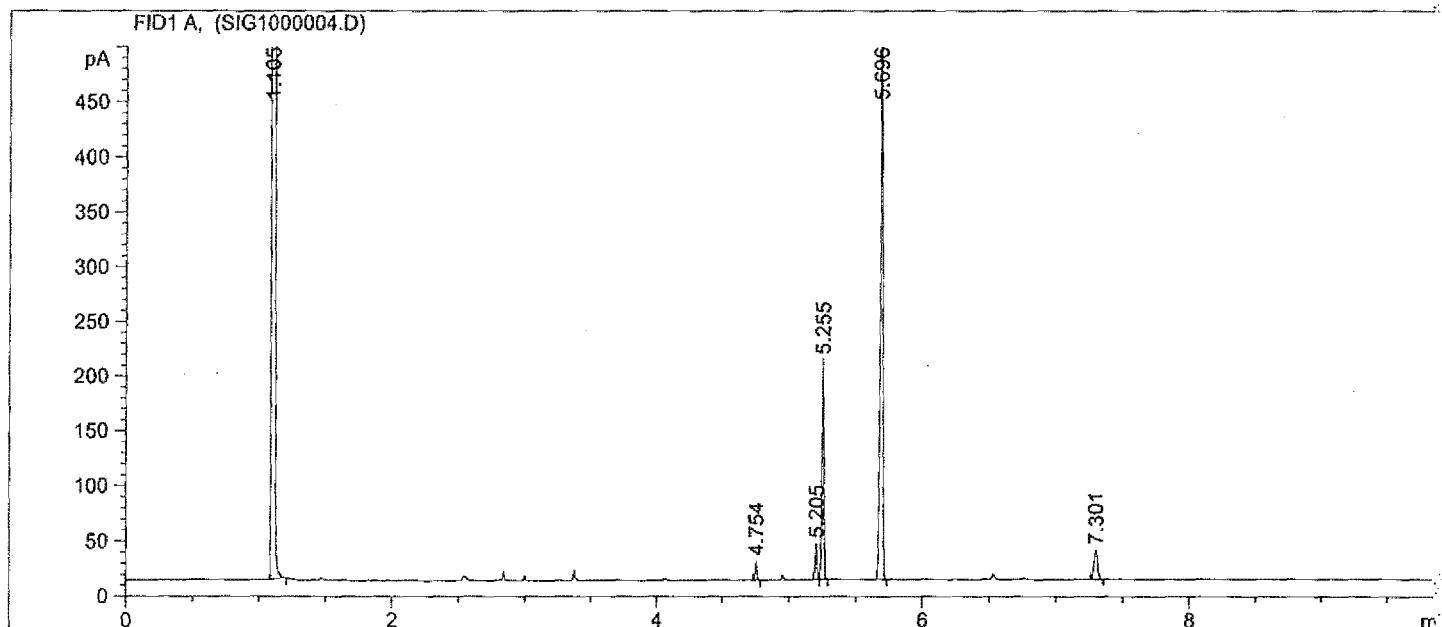
Signal 1: FID1 A,

Peak #	RetTime [min]	Sig	Type	Area [pA*s]	Height [pA]	Area %
1	1.105	1	BB S	6.45042e4	7.14715e4	1.000e2

```
Totals :                    6.45042e4   7.14715e4
```

==

*** End of Report ***

==

```
========================================================================
 Acq. Operator   : ASD                      Seq. Line :   4
 Acq. Instrument : Drug Lab GC#4             Location : Vial 4
 Injection Date  : 10/6/2010 2:04:40 PM           Inj :   1
                                             Inj Volume : 1 µl

 Sequence File   : C:\CHEM32\1\SEQUENCE\DEFAULT.S
 Method          : C:\CHEM32\1\METHODS\ROUTINE.M
 Last changed    : 7/28/2010 1:59:56 PM
========================================================================
```



```
========================================================================
                      Area Percent Report
========================================================================

 Sorted By           :      Retention Time
 Multiplier:                :      1.0000
 Dilution:                  :      1.0000
 Do not use Multiplier & Dilution Factor with ISTDs

 Signal 1: FID1 A,
```
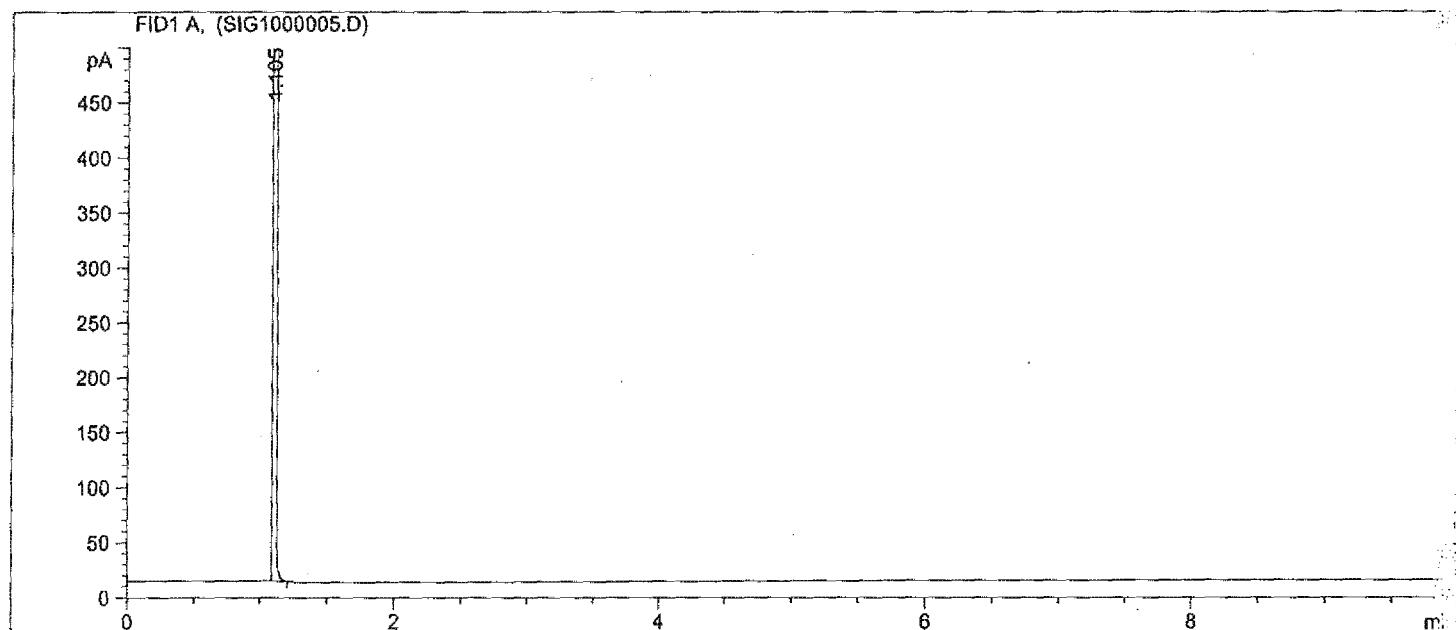
Peak #	RetTime [min]	Sig	Type	Area [pA*s]	Height [pA]	Area %
1	1.105	1	BB S	6.02781e4	6.98928e4	98.38583
2	4.754	1	BB	14.20824	16.90112	0.02319
3	5.205	1	BV	32.88813	32.28829	0.05368
4	5.255	1	VB	213.23862	199.10071	0.34805
5	5.696	1	BB	676.14111	516.73309	1.10360
6	7.301	1	BB	52.47693	26.54356	0.08565

```
 Totals :                   6.12670e4   7.06843e4
```

```
========================================================================
                       *** End of Report ***
========================================================================
```

Data File C:\CHEM32\1\DATA\SIG1000005.D
Sample Name: BLANK

═══

Acq. Operator	: ASD	Seq. Line : 5
Acq. Instrument	: Drug Lab GC#4	Location : Vial 5
Injection Date	: 10/6/2010 2:17:40 PM	Inj : 1
		Inj Volume : 1 µl

Sequence File   : C:\CHEM32\1\SEQUENCE\DEFAULT.S
Method   : C:\CHEM32\1\METHODS\ROUTINE.M
Last changed   : 7/28/2010 1:59:56 PM

═══

FID1 A, (SIG1000005.D)

═══
                    Area Percent Report
═══

Sorted By   :   Retention Time
Multiplier: :   1.0000
Dilution: :   1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

| Peak | RetTime | Sig | Type | Area | Height | Area |
#	[min]			[pA*s]	[pA]	%
1	1.105	1	BB S	6.27408e4	7.11556e4	1.000e2
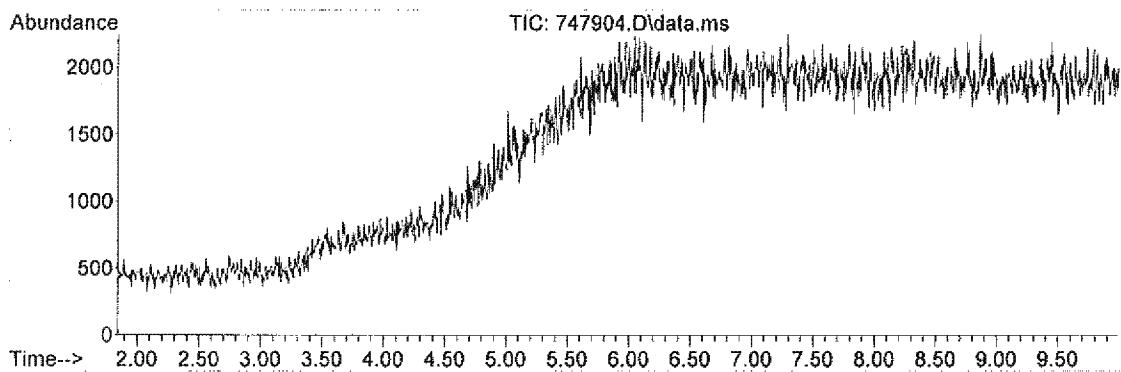
Totals :   6.27408e4   7.11556e4

═══

                    *** End of Report ***

═══

√ KAC
2/17/12

Information from Data File:
File Name   : F:\Q4-2010\SYSTEM7\10_08_10\747904.D
Operator   : KAC
Date Acquired : 8 Oct 2010 12:27
Sample Name   : BLANK
Submitted by :
Vial Number   : 1
AcquisitionMeth: DRUGS.M
Integrator   : RTE

Ret. Time	Area	Area %	Ratio %

NO INTEGRATED PEAKS

Area Percent / Library Search Report

Information from Data File:
File Name   : F:\Q4-2010\SYSTEM7\10_08_10\747905.D
Operator   : KAC
Date Acquired : 8 Oct 2010   12:39
Sample Name   : HEROIN STD
Submitted by   :
Vial Number   :   5
AcquisitionMeth: DRUGS.M
Integrator   : RTE

TIC: 747905.D\data.ms
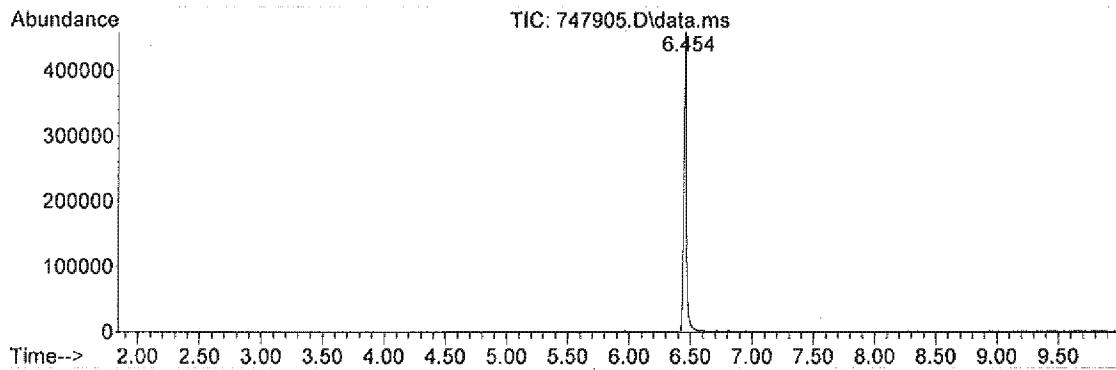
Ret. Time	Area	Area %	Ratio %
6.454	697085	100.00	100.00
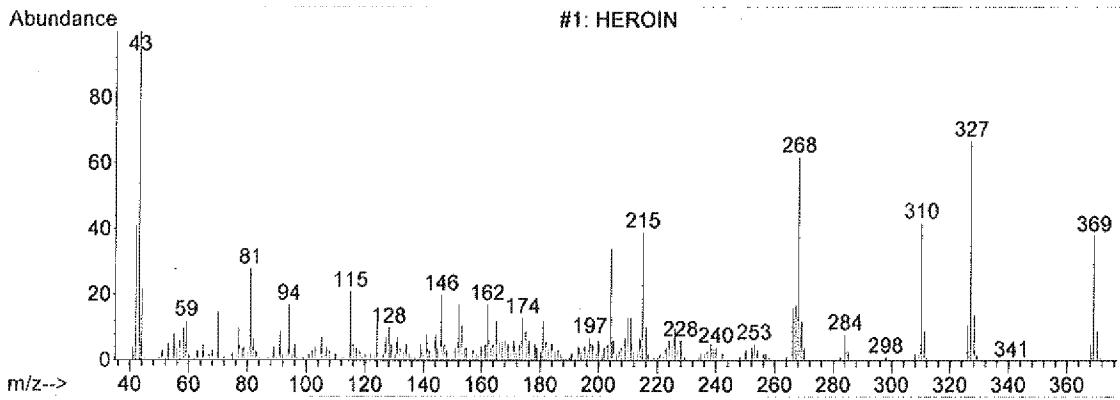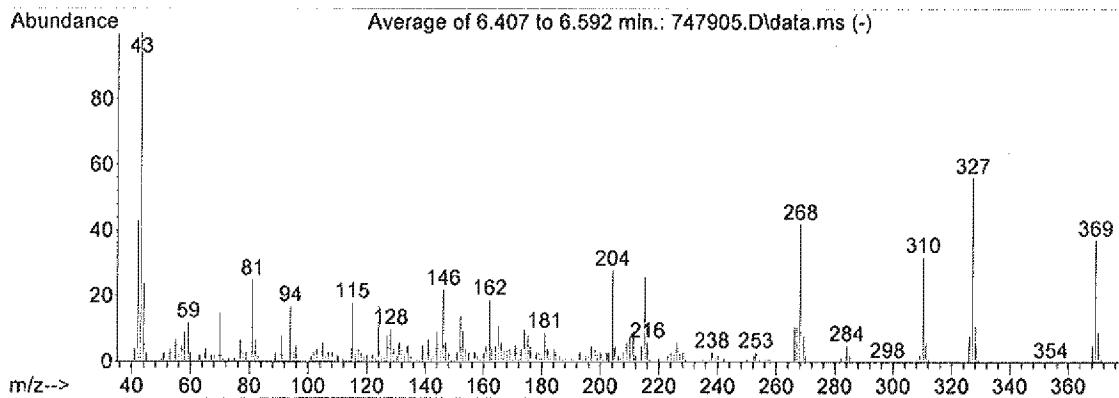
747905.D   Fri Feb 17 08:53:13 2012   Page 1

Information from Data File:
File Name   : F:\Q4-2010\SYSTEM7\10_08_10\747905.D
Operator   : KAC
Date Acquired : 8 Oct 2010 12:39
Sample Name   : HEROIN STD
Submitted by   :
Vial Number   : 5
AcquisitionMeth: DRUGS.M
Integrator   : RTE

Search Libraries: C:\Database\SLI.L   Minimum Quality: 80
                    C:\Database\NIST05a.L   Minimum Quality: 80
                    C:\Database\PMW_TOX2.L

PK#	RT	Library/ID	CAS#	Qual
1	6.45	C:\Database\SLI.L		
		HEROIN	000561-27-3	99

Average of 6.407 to 6.592 min.: 747905.D\data.ms (-)

#1: HEROIN
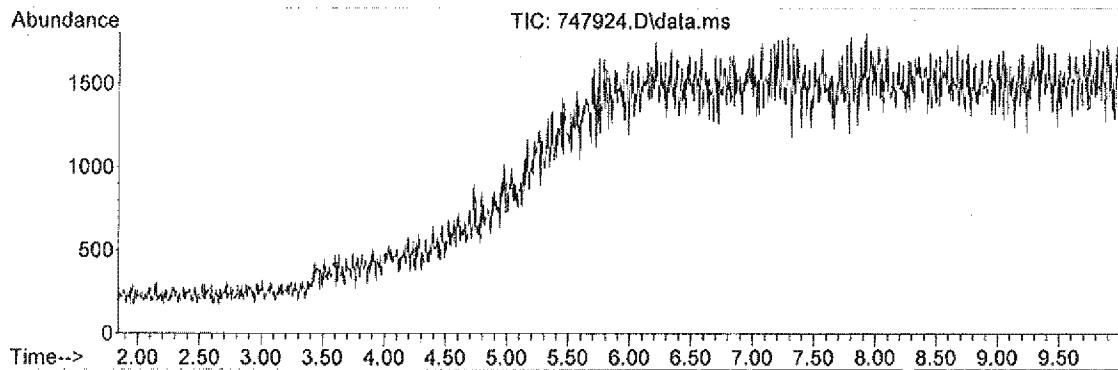
Information from Data File:
File Name   : F:\Q4-2010\SYSTEM7\10_08_10\747924.D
Operator   : KAC
Date Acquired : 8 Oct 2010 16:41
Sample Name   : BLANK
Submitted by   : MGL
Vial Number   : 1
AcquisitionMeth: DRUGS.M
Integrator   : RTE

Ret. Time   Area   Area %   Ratio %

NO INTEGRATED PEAKS
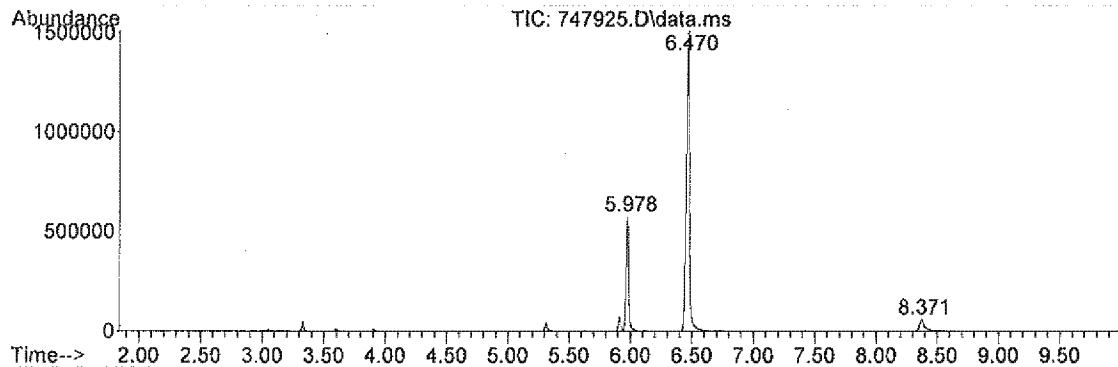
Area Percent / Library Search Report

Information from Data File:
```
File Name        : F:\Q4-2010\SYSTEM7\10_08_10\747925.D
Operator         : KAC
Date Acquired    :  8 Oct 2010   16:54
Sample Name      : ███████████
Submitted by     : MGL
Vial Number      :  25
AcquisitionMeth: DRUGS.M
Integrator       : RTE
```


Ret. Time	Area	Area %	Ratio %
5.978	783023	20.90	28.08
6.470	2788073	74.42	100.00
8.371	175274	4.68	6.29
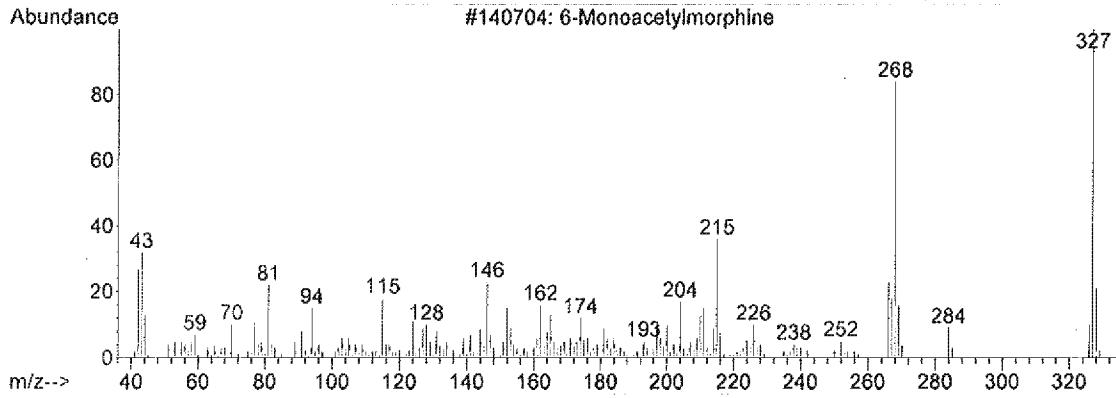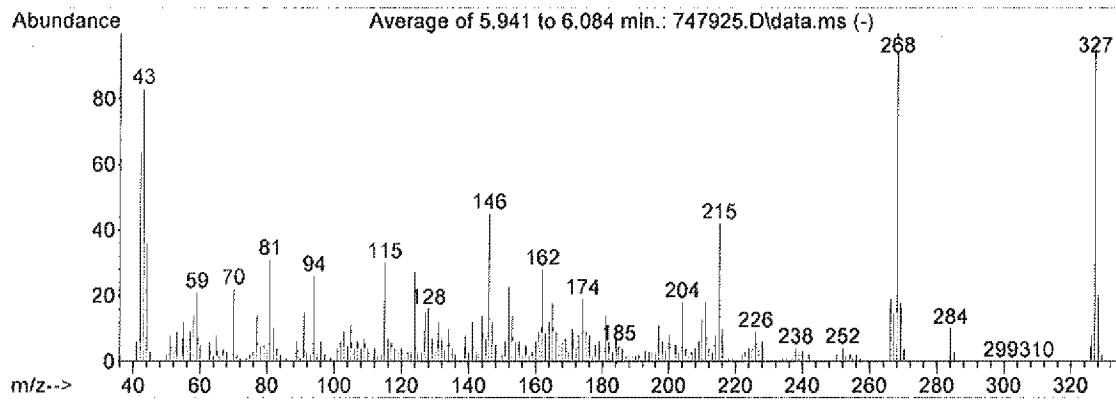
747925.D   Fri Feb 17 08:53:40 2012   Page 1

Information from Data File:
```
File Name       : F:\Q4-2010\SYSTEM7\10_08_10\747925.D
Operator        : KAC
Date Acquired   :  8 Oct 2010  16:54
Sample Name     : ███████████
Submitted by    : MGL
Vial Number     :  25
AcquisitionMeth : DRUGS.M
Integrator      : RTE
```

Search Libraries:	C:\Database\SLI.L	Minimum Quality: 80
	C:\Database\NIST05a.L	Minimum Quality: 80
	C:\Database\PMW_TOX2.L	

PK#	RT	Library/ID	CAS#	Qual
1	5.98	C:\Database\NIST05a.L		
		6-Monoacetylmorphine	002784-73-8	99
		6-Monoacetylmorphine	002784-73-8	99
		6-Monoacetylmorphine	002784-73-8	99

Abundance   Average of 5.941 to 6.084 min.: 747925.D\data.ms (-)
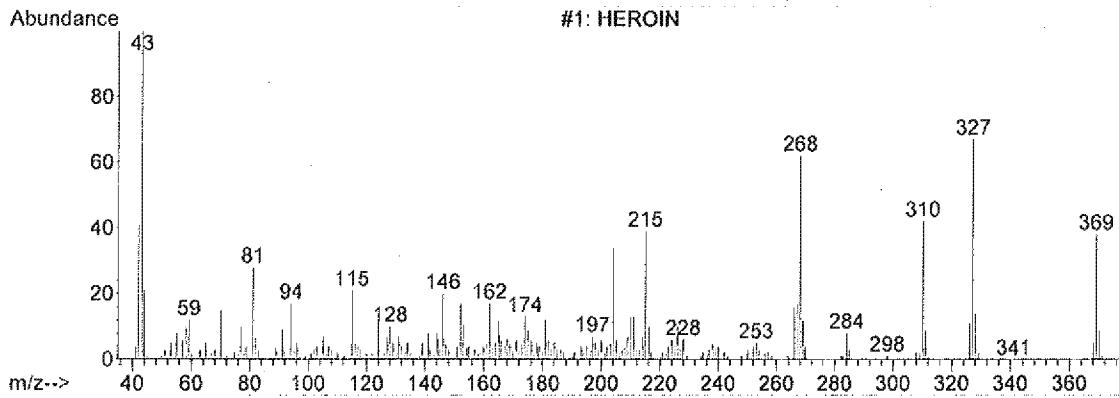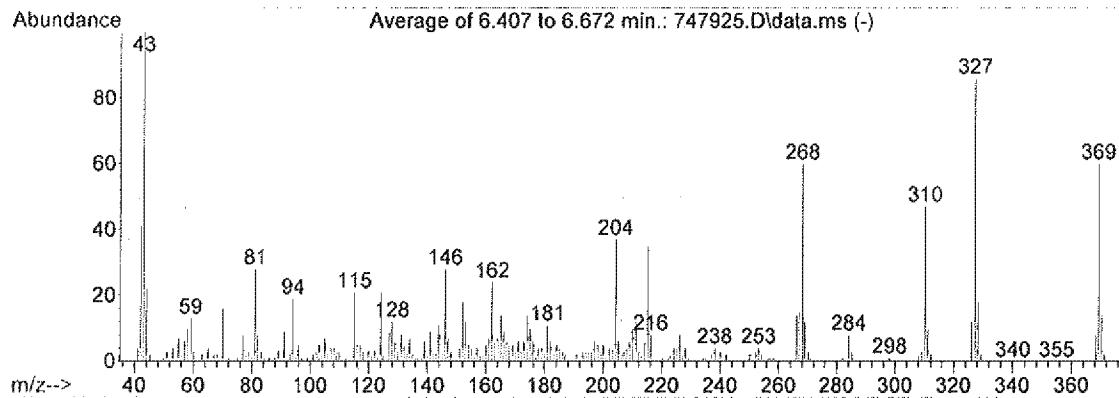
Abundance   #140704: 6-Monoacetylmorphine

747925.D   Fri Feb 17 08:53:41 2012   Page   2

Information from Data File:
File Name   : F:\Q4-2010\SYSTEM7\10_08_10\747925.D
Operator   : KAC
Date Acquired : 8 Oct 2010   16:54
Sample Name   : ███████████
Submitted by : MGL
Vial Number   : 25
AcquisitionMeth: DRUGS.M
Integrator   : RTE

Search Libraries: C:\Database\SLI.L   Minimum Quality: 80
                   C:\Database\NIST05a.L   Minimum Quality: 80
                   C:\Database\PMW_TOX2.L

PK#	RT	Library/ID	CAS#	Qual
2	6.47	C:\Database\SLI.L		
		HEROIN	000561-27-3	99
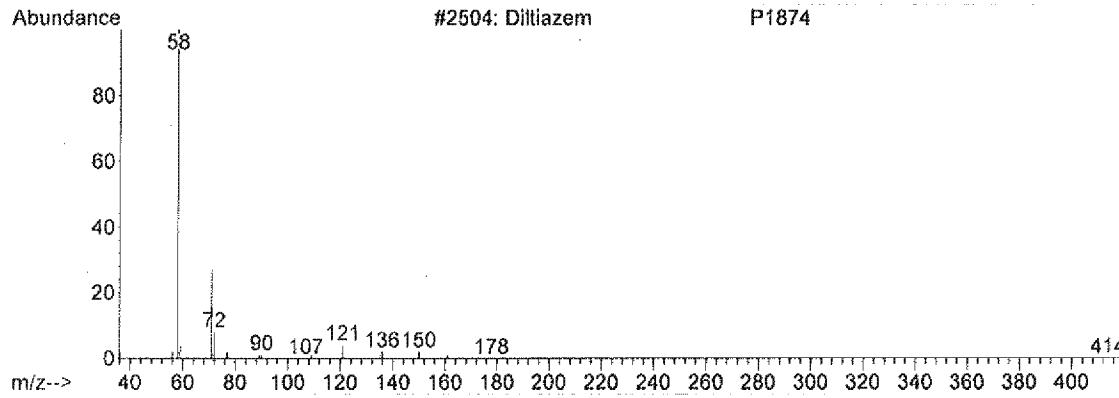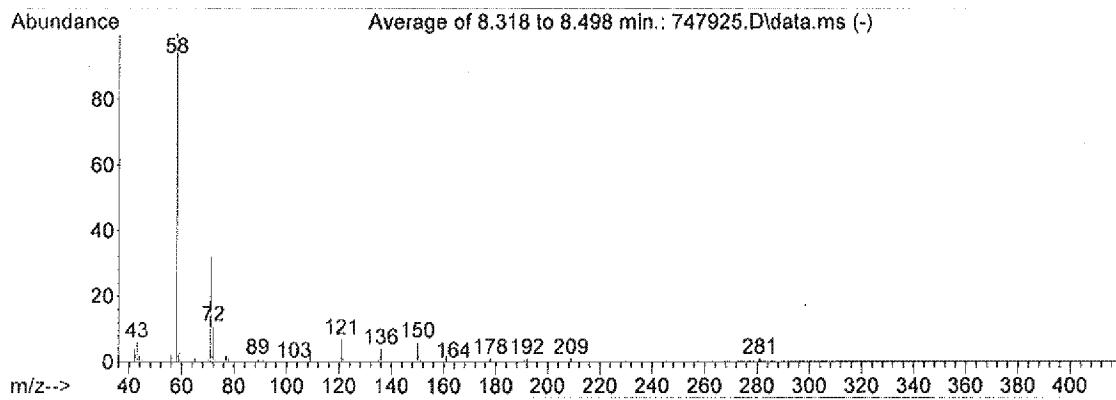
Average of 6.407 to 6.672 min.: 747925.D\data.ms (-)

#1: HEROIN

747925.D   Fri Feb 17 08:53:42 2012   Page 3

Folk_OIG_PRR_069693

Information from Data File:
```
File Name        : F:\Q4-2010\SYSTEM7\10_08_10\747925.D
Operator         : KAC
Date Acquired    : 8 Oct 2010   16:54
Sample Name      : ███████████
Submitted by     : MGL
Vial Number      : 25
AcquisitionMeth: DRUGS.M
Integrator       : RTE
```

Search Libraries: C:\Database\SLI.L   Minimum Quality: 80
   C:\Database\NIST05a.L   Minimum Quality: 80
                    C:\Database\PMW_TOX2.L

PK#	RT	Library/ID	CAS#	Qual
3	8.37	C:\Database\PMW_TOX2.L		
		Diltiazem	042399-41-7	86
		Diltiazem-M (desacetyl-)	000000-00-0	78
		Diltiazem-M (O-desmethyl-) AC	000000-00-0	72
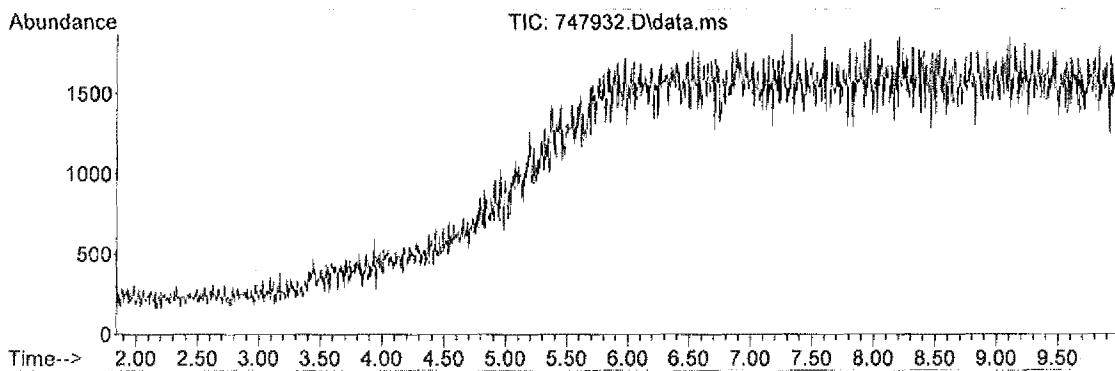
Abundance   Average of 8.318 to 8.498 min.: 747925.D\data.ms (-)

```
    58
80
60
40
20
   43    72        121 136 150
       89 103          164 178 192 209        281
0
m/z-->  40  60  80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400
```

Abundance   #2504: Diltiazem   P1874

```
    58
80
60
40
20
    72
       90 107 121 136 150   178                                414
0
m/z-->  40  60  80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400
```

Area Percent / Library Search Report

Information from Data File:
File Name   : F:\Q4-2010\SYSTEM7\10_08_10\747932.D
Operator   : KAC
Date Acquired : 8 Oct 2010 18:22
Sample Name : BLANK
Submitted by :
Vial Number : 1
AcquisitionMeth: DRUGS.M
Integrator   : RTE

Abundance   TIC: 747932.D\data.ms

1500

1000

500

0
Time--> 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 6.00 6.50 7.00 7.50 8.00 8.50 9.00 9.50

Ret. Time   Area   Area %   Ratio %

NO INTEGRATED PEAKS

747932.D   Fri Feb 17 08:53:56 2012   Page 1

Information from Data File:
File Name   : F:\Q4-2010\SYSTEM7\10_08_10\747933.D
Operator   : KAC
Date Acquired : 8 Oct 2010   18:35
Sample Name   : HEROIN STD
Submitted by   :
Vial Number   : 33
AcquisitionMeth: DRUGS.M
Integrator   : RTE

Abundance   TIC: 747933.D\data.ms
                                        6.454

400000

300000

200000

100000

       0
Time-->   2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 6.00 6.50 7.00 7.50 8.00 8.50 9.00 9.50
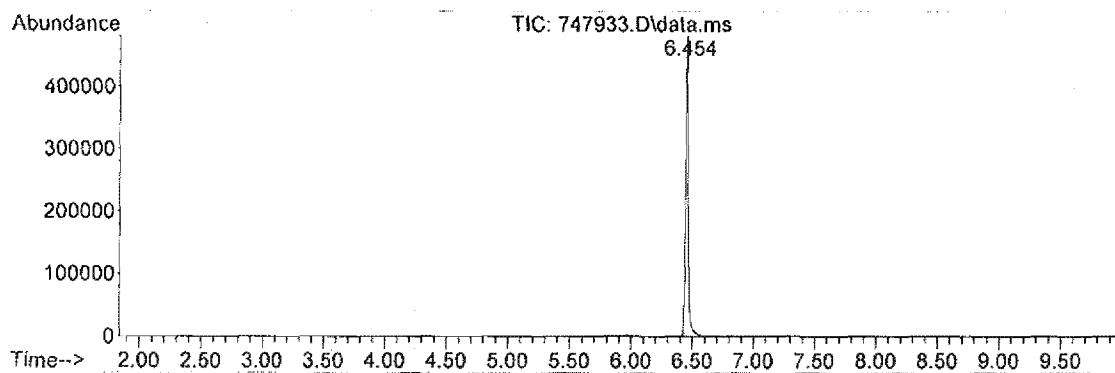
Ret. Time   Area   Area %   Ratio %

6.454   745330   100.00   100.00
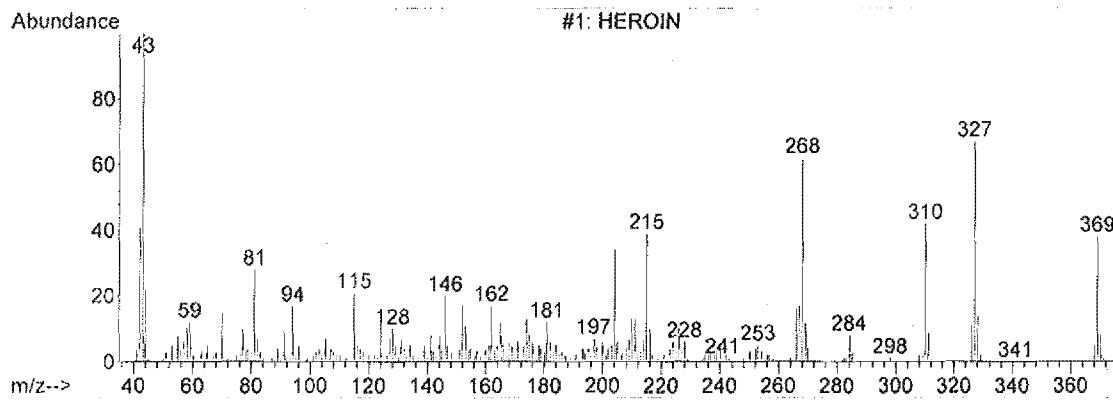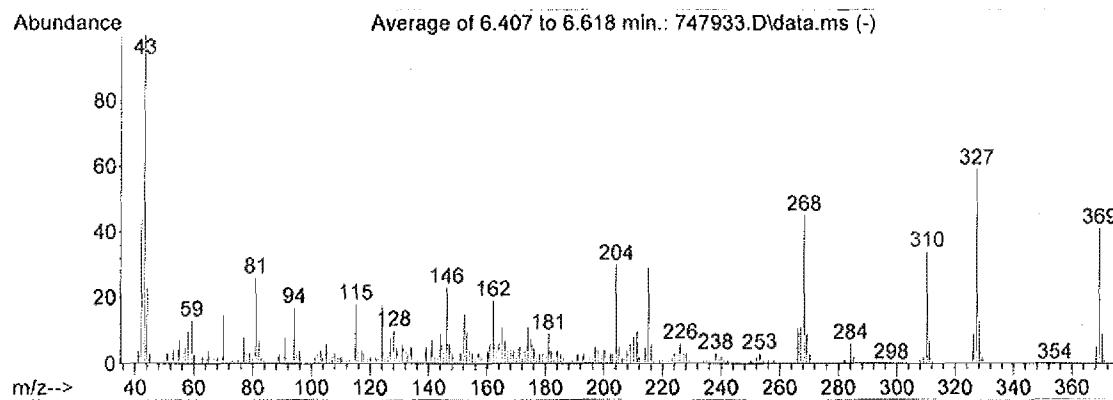
747933.D   Fri Feb 17 08:54:00 2012   Page 1

Information from Data File:
File Name   : F:\Q4-2010\SYSTEM7\10_08_10\747933.D
Operator   : KAC
Date Acquired   : 8 Oct 2010 18:35
Sample Name   : HEROIN STD
Submitted by   :
Vial Number   : 33
AcquisitionMeth: DRUGS.M
Integrator   : RTE

Search Libraries: C:\Database\SLI.L   Minimum Quality: 80
                    C:\Database\NIST05a.L   Minimum Quality: 80
                    C:\Database\PMW_TOX2.L

PK#	RT	Library/ID	CAS#	Qual
1	6.45	C:\Database\SLI.L HEROIN	000561-27-3	99

Average of 6.407 to 6.618 min.: 747933.D\data.ms (-)

#1: HEROIN

747933.D   Fri Feb 17 08:54:01 2012   Page 2

Folk_OIG_PRR_069697

Last page...... ...no further data